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Los Alamos NATIONAL LABORATORY EST. 1943

Environmental Stewardship–
Environmental Characterization and Remediation

Quality Procedure

for

Developing a Technical Safety Requirements Implementation Plan at Nuclear Environmental Sites

☑ **NES APPROVED**

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Revision Log

Revision No.	Effective Date	Prepared By	Description of Changes	Affected Pages
R0	8/05/05	Kent Rich	New Procedure	All
R0, ICN1	9/30/05	Kent Rich	Minor changes to Attachment A	11–22
R1	3/27/06	Kent Rich	Addressed finding from Laboratory Readiness Assessment	All

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Table of Contents

List of Acronyms and Abbreviations

AC	administrative control
ECR	Environmental Characterization and Remediation Group
EDS	Employee Development System
ENV	Environmental Stewardship Division
DF	design feature
DOE	Department of Energy
DOT	Department of Transportation
DSA	documented safety analysis
HAZWOPER	Hazardous Waste Operations and Emergency Response
HSR-1	Health Physics Operations Group
IWD	integrated work document
IWM	integrated work management
LANL	Los Alamos National Laboratory
LIR	Laboratory implementation requirement
MSA	management self-assessment
NES	Nuclear Environmental Sites
OSHA	Occupational Safety and Health Administration
PIC	person-in-charge
PID	photoionization detector
PPE	personal protective equipment
QII	quality improvement and integration
QMP	quality management plan

QP	quality procedure
RAD	radiological
RCT	radiation control technician
RDL	responsible division leader
RLM	responsible line manager
RPF	Records Processing Facility
S&M	surveillance and maintenance
SER	safety evaluation report
SSHASP	site-specific health and safety plan
SMO	Sample Management Office
SMP	safety management program
SOP	standard operating procedure
TSR	technical safety requirement
USQ	unreviewed safety question
UTR	University technical representative
WCSF	waste characterization strategy form

QP-4.13, R1, Developing a Technical Safety Requirement Implementation Plan at Nuclear Environmental Sites

1.0 PURPOSE

This quality procedure (QP) states responsibilities and describes the process for developing a technical safety requirements (TSR) implementation plan for Nuclear Environmental Sites (NESs) within the Los Alamos National Laboratory (LANL or the Laboratory) Environmental Stewardship (ENV) Division–Environmental Characterization and Remediation (ECR) Group. The TSR implementation plan shall identify limits, controls, and related actions that establish specific parameters and requisite actions for safe operation of an NES during drilling and sampling activities. These controls are designed to protect public health and safety and to minimize potential risk to workers from the uncontrolled release of radioactive and other hazardous materials.

2.0 SCOPE

All **participants** shall follow this mandatory procedure when developing a TSR implementation plan for surveillance and maintenance (S&M) activities at an NES for ENV-ECR.

3.0 TRAINING

3.1 **Participants** shall train to and use the current version of this procedure; contact the author of this procedure if the text is unclear.

3.2 **Participants** shall document training to this procedure in accordance with QP-2.2, “Personnel Training Management Process,” using the training documentation link at the end of this procedure if they possess a CRYPTOCard, have administrative authority to the Laboratory, and are listed in the Employee Development System (EDS), or, alternatively, by using hardcopy forms located at http://erinternal.lanl.gov/home_links/Library_proc.shtml.

3.3 The responsible **project leader** shall monitor the proper implementation of this procedure.

3.4 The responsible **team leader** shall ensure that the appropriate personnel complete all applicable training assignments.

3.5 **Participants** may request any needed assistance with implementation of this procedure from ENV-ECR quality integration and improvement (QII).

3.6 The **ENV-ECR safety-basis expert** shall be responsible for ensuring the proper training of project leaders managing work at NESs.

4.0 DEFINITIONS

4.1 *CRYPTOCard*—A credit-card-size computer that generates “one-time” passwords or “passcodes.” Like a desktop computer, the CRYPTOCard has a keypad for input, a display window for output, memory, and a microprocessor.

4.2 *Design basis*—The information which identifies the specific functions to be performed by a design feature and the specific values or ranges of values chosen for controlling parameters as reference bounds for design. These values may form

- restraints derived from generally accepted “state-of-the-art” practices for achieving functional goals; or
- requirements derived from analysis (based on calculations and/or experiments) of the effects of a postulated accident for which a structure, system, or component must meet its functional goals.

4.3 *Documented Safety Analysis (DSA)*—A documented analysis of the extent to which a nuclear facility can be operated safely with respect to workers, the public, and the environment, including a description of the conditions, safe boundaries, and hazard controls that provide the basis for ensuring safety.

4.4 *Employee Development System*—The Laboratory’s official training records database that maintains and archives vital training records. EDS attributes include, but are not limited to, a training program catalog, registration, and enrollment functions; class lists; course cost information; historical information of Laboratory worker training records; transcripts of completed training for Laboratory workers; individual training plans; and training reports.

4.5 *Nuclear Environmental Site*—Inactive waste handling or disposal areas characterized as hazard category 2 or 3 according to U.S. Department of Energy (DOE) DOE-STD-1027 thresholds, which are based on quantities of radioactive material at the site.

4.6 *Participant*—An inclusive term for any University of California/staff augmentation employee, deployed worker, or subcontractor, inclusive of project leaders, team leaders, and project personnel, who participates in activities conducted by or on behalf of ENV-ECR.

4.7 *Project leader*—A Laboratory employee or deployed worker directly responsible for management of one or more projects.

4.8 *Quality procedure*—A document that describes the process for performing an activity governed by the quality management plan.

4.9 *Responsible division leader (RDL)*—The division leader responsible for the facility or area where ENV-ECR work will be conducted.

4.10 *Responsible line manager (RLM)*—The ENV-ECR group leader responsible for approving and performing work associated with the subject project.

4.11 *Safety basis expert*—An ENV-ECR participant experienced in NES safety basis documents and requirements.

4.12 *Safety management program* (SMP)—A program designed to ensure a facility is operated in a manner that adequately protects workers, the public, and the environment by covering topics such as quality assurance; maintenance of safety systems; personnel training; conduct of operations; inadvertent criticality protection; emergency preparedness; fire protection; waste management; or radiological protection of workers, the public, and the environment.

4.13 *Team leader*—The individual in direct line of authority for the project leader.

4.14 *Technical expert*—An individual qualified to perform evaluations as the result of relevant background, education, and/or experience.

4.15 *Technical Safety Requirement*—The limits, controls, and related actions that establish the specific parameters and requisite actions for the safe operation of a nuclear facility and include the following items as appropriate for the work and the hazards identified in the DSA for the facility: safety limits, operating limits, surveillance requirements, administrative and managerial controls, use and application provisions, and design features, as well as bases.

4.16 *Unreviewed Safety Question (USQ)*—A situation where

- the probability of the occurrence, or the consequences of an accident, or the malfunction of equipment important to safety previously evaluated in the documented safety analysis could be increased;
- the possibility of an accident or malfunction of a different type than any evaluated previously in the DSA could be created;
- a margin of safety could be reduced; or
- the DSA may not be bounding or may be otherwise inadequate.

5.0 RESPONSIBLE PERSONNEL

The following personnel are responsible for activities identified in this procedure:

- Participants
- Project leader
- Safety basis expert
- Team leader

6.0 PROCEDURE

6.1 Develop a TSR implementation plan

The responsible project leader shall ensure the following:

6.1.1 The TSR implementation plan addresses all administrative controls (ACs) and SMPs identified in the DSA, TSR, and safety evaluation report (SER). An annotated outline for a TSR implementation plan is provided in Attachment A.

6.1.2 Design basis documentation included in the TSR implementation plan shall be in accordance with QP-6.1, “Design Basis.”

6.1.3 The TSR implementation plan is developed in accordance with this QP and is submitted for review and approval in accordance with QP-4.9, “Document Development and Approval Process.”

6.1.4 Review (in accordance with QP-3.5, “Peer Review Process”) and approval (in accordance with QP-4.9) of the TSR implementation plan shall be conducted by the following participants:

- Project leader
- Technical reviewer
- Safety basis expert
- Responsible line manager
- Responsible division leader

6.1.5 An approved investigation work plan has been developed, reviewed, and approved by the administrative authority.

6.1.6 The TSR implementation plan is subject to the process defined in QP-4.5, “Document Control.”

7.0 LESSONS LEARNED

7.1 Before performing work described in this QP, **participants** should go to the DOE's Lessons Learned Information Services home page, located at http://www.tis.eh.doe.gov/ll/ll.html, and/or to the Laboratory's Lessons Learned Resources web page, located at http://www.lanl.gov/projects/lessons_learned/, and search for applicable lessons.

7.2 During work performance and/or after the completion of work activities, **participants**, as appropriate, shall identify, document, and submit lessons learned in accordance with the Laboratory's Lessons Learned System located at http://www.lanl.gov/projects/lessons_learned/.

8.0 RECORDS

The **project leader** shall submit the following records to the Records Processing Facility (RPF), in accordance with QP-4.4, "Record Transmittal to the Records Processing Facility."

- Completed Document Signature Form
- Approved TSR implementation plan document

9.0 REFERENCES

To properly implement this QP, participants should become familiar with the contents of the following documents, located at http://erinternal.lanl.gov/home_links/Library_proc.shtml:

- Quality Management Plan
- QP-2.2, "Personnel Training Management Process"
- QP-3.5, "Peer Review Process"
- QP-4.4, "Record Transmittal to the Records Processing Facility"
- QP-4.9, "Document Development and Approval Process"
- QP-6.1, "Design Basis"

Note the following other related references:

- DOE 2005, RCJ012505-001, "Safety Evaluation Report for Documented Safety Analysis and Technical Safety Requirements (TSRs) for Surveillance and Maintenance of Nuclear Environmental Sites at Los Alamos National Laboratory"
- LANL 2004, LA-UR-04-7505, "Documented Safety Analysis for Surveillance and Maintenance of Nuclear Environmental Sites at Los Alamos National Laboratory"

10.0 ATTACHMENTS

Participants using this QP may locate all forms associated with this procedure at http://erinternal.lanl.gov/Quality/user/forms.asp.

Attachment A: Annotated Outline for a TSR Implementation Plan at an NES.

Using a CRYPTOCard, click here to record "self-study" training to this procedure.
If you do not possess a CRYPTOCard or encounter problems, contact the ENV-ECR training specialist.

Attachment A:
Annotated Outline for a TSR Implementation Plan at an NES

The outline and content of the TSR implementation plan may vary depending on site-specific and programmatic conditions. This outline is provided solely as an aid to the Project Leader in preparing a site-specific TSR implementation plan for an NES.

1.0 INTRODUCTION

Provide a brief overview of the DSA and TSR requirements with a brief description of the barrier analysis under the DSA.

2.0 PURPOSE

Describe in detail the TSRs that will be implemented at the specific NES. State that the implementation plan provides a description of and guidance for the safety controls that will be implemented to ensure workers, the public, and the environment are protected from the radiological, chemical, and other hazards associated with the drilling and sampling activities to be conducted at the NES. Include a brief description of the activities to be conducted at the particular NES.

3.0 SITE DESCRIPTION(S)

Describe the site(s) and categorization of the site as an NES. Use the DSA to help find information regarding NES categorization. Summarize design features (Section 6.0) listing pertinent information regarding documented locations of buried wastes, caps, and other physical features, along with information summarizing location and levels of contamination.

4.0 OPERATIONS

4.1 Presampling Tasks

List the field activities required before the physical activity of drilling begins, including special requirements such as marking setbacks from waste disposal areas and not penetrating the NES surface, except by the borehole at the designated borehole location. List site controls established and maintained during drilling activities that ensure control and security of the NES. Discuss conformance of predrilling activities to TSR requirements.

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4.2 Sampling Tasks

List drilling and sampling processes and activities to be conducted related to work plan execution. Required information includes type of drill rig and other methods of sample collection, controls for cuttings and samples, handling of samples, and transportation processes for moving samples to the Sample Management Office (SMO) (including methods of U.S. Department of Transportation [DOT] compliance). Provide a table of drilling and sampling locations and activities. Make sure to allow for potential deviation from the planned activities.

Include a discussion of how borehole layout was determined, setbacks from waste disposal units determined, angle hole locations (if any), and special control requirements. Show the tentative location of boreholes on a figure. Discuss allowance for moving borehole locations based on actual field conditions since variances from the implementation plan require an USQ determination.

4.3 Postsampling Tasks

List activities necessary to restore the site to predrilling conditions, including special requirements such as restoring the site in a manner as to not penetrate the predrilling site surface.

5.0 ADMINISTRATIVE CONTROLS

5.1 Purpose

State the purpose of ACs to define the provisions that relate to organization and management, procedures, record keeping, review and audit, reporting, and SMPs necessary to ensure safe conduct of NES S&M activities and provide physical barrier protection.

5.2 Organization and Management Responsibility

Discuss establishing and defining authority, responsibility, and communication through the first-line supervisor to ensure safe operation of the NES activities. Include a flow chart of organizational and management responsibilities. Indicate that project communications as they apply to emergency response are included in the integrated work document (IWD) and/or site-specific health and safety plan (SSHASP).

Discuss the role of the RDL. Refer to any applicable facility-tenant agreements.

5.3 Technical Safety Requirements

State the applicable TSRs for the specific work activities and the implementation strategies to address them are included in this plan.

5.3.1 General

Discuss the requirements for review and approval of TSRs, including mechanisms for controlling and revising the documents.

Discuss the process for conducting emergency actions that depart from the TSRs. Describe the notification requirements in the event emergency actions are taken, including 24-hr verbal notification to DOE and written notification to the Cognizant Secretarial Officer.

5.3.2 Compliance

Note that the RDL is responsible for ensuring that the requirements of the TSRs are met and that compliance is demonstrated by establishing, implementing and maintaining the required ACs and design features (DFs).

5.3.3 Violation of a TSR

Acknowledge the mechanisms for violation of a TSR. Include a description of a directive language AC, the failure of which could result in an immediate TSR violation.

5.3.4 Response to a TSR violation

Include the actions for responding to a TSR violation. These actions include ensuring that a safe condition is established. Also include a callout list or figure.

5.4 Procedures

State procedures are in place and implemented to meet the AC requirements presented in the TSRs. Discuss how ENV-ECR's approved quality program meets 10 CFR 830 Subpart A, DOE Order 414.1 and LANL's QMP IP-300-SD (currently in draft form), or LPR 308-00-00, if the IP is not yet issued. Discuss how the process works and reference the section of the implementation plan containing discussions of SMP 5, Quality Assurance Program.

Include a statement that new or modified procedures must undergo the USQ process prior to implementation. Refer to Section 5.6.3 of the TSR implementation plan.

5.5 Review and Audit

Indicate that sampling activities at the NES be evaluated by a management self-assessment (MSA) as described in QP 5.18. Work will not be conducted at the NES until readiness has been demonstrated. A management safety walk-around will be conducted once fieldwork begins.

5.6 Safety Management Programs

Describe SMPs as institutional control programs identified in the TSRs as ensuring safe operation for the specified activities associated with the TSR implementation plan. Each program is required to be adapted to the specific drilling and sampling activities and operations established in the TSR document. Failure to meet programmatic intent constitutes a TSR violation. Prepare subsections identifying each applicable SMP and describe how the site-specific activities address the SMP requirement. Describe the SMP under consideration. Use verbatim text from the TSR document. Repeat subsection headings until all applicable SMPs are identified. Discuss how programmatic requirements meet the SMP requirement. List and discuss any site-specific conditions requiring special consideration. Describe the condition and list the mitigation/action taken in order to accommodate the condition identified.

5.6.1 SMP 1–NES S&M Program

State that drilling and sampling are activities associated with NES S&M. This section will describe site-specific activities and limitations related to the S&M activities. Describe any special conditions contributing to the general understanding of site-specific mitigating features.

5.6.1.1 Prohibition to the Addition of Hazardous Materials

Copy text from the TSR document, item 1 of Section 5.6.1.

Activities to Address Prohibition to the Addition of Hazardous Materials

State the use of hazardous materials is limited to those contained within the field vehicles and/or drill rig. List any other hazardous material and cite the limiting quantities and anticipated field quantities (must be less than limiting quantities). State that site-specific training will be conducted before sampling activities begin.

5.6.1.2 Vegetation Maintenance

Copy text from the TSR document, item 2 of Section 5.6.1.

Activities to Address Vegetation Maintenance

Discuss vegetation-related site preparation activities that have a potential for disturbing the site surface such as cutting trees, etc. State how these activities will be conducted to ensure the surface will not be penetrated.

Also, discuss how damaged vegetation would be restored without intrusive activities.

5.6.1.3 Erosion Control Measures

Copy text from the TSR document, item 3 of Section 5.6.1.

Activities to Address Erosion Control Measures

Discuss any erosion control measures required to mitigate the potential for erosion during site activities and how they will be installed without surface intrusion.

5.6.1.4 Access Control and Maintenance Measures

Copy text from the TSR document, item 4 of Section 5.6.1.

Activities to Address Access Control and Maintenance Measures

Discuss access control requirements, including signage requirements, temporary equipment and waste storage facilities, and any access facilities such as temporary access roads having a potential to disturb or penetrate the site surface. Describe how these activities will be accomplished without surface intrusion.

5.6.1.5 Drilling Controls

Copy text from the TSR document, item 5 of section 5.6.1.

(a) Predrilling Location Evaluation

Copy text from the TSR document, item 5a of Section 5.6.1.

Activities to Address Predrilling Location Evaluation

Describe or list the predrilling site activities, indicating those tied to TSR requirements. Generally, predrilling activities include preparation of the design basis that should summarize the status of facilities at the NES, including design/as-built drawings, geophysical information, existing surveys, and any other historic records contributing to definition of the existing facility conditions. The design basis should provide evaluation of the information and determine criteria for designing predrilling activities.Predrilling activity requirements should be clearly stated in this section.

(b) Location Evaluation during Angle Drilling

Copy text from the TSR, item 5b of Section 5.6.1.

Activities Addressing Location Evaluation during Angle Drilling

Describe angle-drilling activities, if applicable. Refer to the design features (Section 6.0) for details of the angle borehole drilling design requirements derivation. List and state clearly the minimum setbacks from waste disposal areas and any other requirements identified by the design basis document and describe the relation to TSR requirements. Use figures to depict the concept of setback for angle drilling, if necessary.

(c) Monitoring and Measurements of Work Environment and Vicinity During Drilling

Copy text from the TSR document, item 5c of Section 5.6.1.

Activities to Address Monitoring and Measurements of Work Environment and Vicinity during Drilling

State engineering control requirements for monitoring and measurement of the work environment that have been developed and established in the implementation plan, the IWD, and the SSHASP. Present a table of monitoring and measurement requirements that list each hazard, and for each hazard identify the monitoring instrument to be used, the calibration requirements, the certified operator, action level, action triggered by the action level, and the controlling document.

Describe or list the drilling-related site activities, indicating those tied to TSRs. Generally, drilling activities include site-access road construction, materials storage areas, drilling operations, sampling operations, including nondrilling hand auger and surface sampling, and any other drilling- or sampling-related activities. The design features should evaluate the information and determine the criteria for designing drilling activities. Drilling-activity requirements should be clearly stated in this section. Include the number of drill rigs, size, and type of drill hole. Note: Include all anticipated variances of activities and write the plan broadly enough to evaluate the range of variation and apply appropriate controls.

(d) Monitoring and Measurements of Exhumed Material and Prevention of Contamination

Copy text from the TSR document, item 5d of Section 5.6.1.

Activities to Address Monitoring and Measurements of Exhumed Material

Indicate the methods and types of monitoring to be performed on material as it is exhumed during the drilling process, including visual monitoring by a trained geologist, radiological (RAD) and chemical scans, as well as any other monitoring deemed appropriate. Discuss the process taken if a disposal unit is intercepted during drilling, including referring to Laboratory Implementation Requirement (LIR) 402-130-01, Notice 139, and the USQ process. If a disposal unit is intercepted, it is an immediate TSR violation and the work must be re-evaluated using established NES and LANL procedures.

(e) Controlling the Rate of Material Removal

Copy text from the TSR document, item 5e of section 5.6.1.

Activities to Address Controlling the Rate of Material Removal

Discuss the size and type of borehole and other factors contributing to the rate at which contaminated material may be removed from the original location before drilling operations begin. Cross-reference previous sections for controls necessary to monitor and control the rate of exhumation, such as RAD scans, photoionization detector (PID) tests, etc., and discuss the methods and controls of the rate of material removal. If material is stockpiled or placed into drums, discuss monitoring and the allowable thresholds of material storage at any one location of the process.

(f) Dust Control

Copy text from the TSR document, item 5f of Section 5.6.1.

Activities to Address Dust Control

Discuss limited but real potential to generate minor amounts of dust during drilling activities. Reference past

drilling experiences that indicate such dust generation is acceptable. Discuss the site dust-monitoring activities and reference the previously presented monitoring table. Present actions to be taken if action levels are exceeded.

(g) Breaching the Disposal Unit

Acknowledge that breaching the disposal unit is an Authorization Basis violation. Reference Section 5.3.4 of the TSR implementation plan as to how to respond in the event the disposal unit is breached.

5.6.1.6 Sampling/Surveying Measures

Copy text from the TSR document, item 6 of Section 5.6.1.

Activities to Address Sampling/Survey Measures

State that the implementation plan is part of the program that addresses the requirements for sampling, surveying and measuring at the NES. State that the characterization activities are required as part of regulatory requirements listed in the March 1, 2005, Compliance Order on Consent (the Consent Order) signed by the New Mexico Environment Department, DOE, and the University of California, and the approved investigation work plan. State that data collected will be used to evaluate the condition of the NES.

5.6.1.7 Geologic Mapping

Copy text from the TSR document, item 7 of section 5.6.1.

Activities to Address Geologic Mapping

Discuss the need for geologic mapping as part of the characterization activities. List any controls necessary to execute the mapping activities. Controls may include radiation monitoring by a radiation control technician (RCT), access controls, and site-specific controls identified in the SSHASP and IWD.

5.6.1.8 Visual Inspections

Copy text from the TSR document, item 8 of Section 5.6.1.

Activities to Address Visual Inspections

State those annual or other frequency surveillance

inspections are not within the scope of the drilling activities covered by the drilling plan. Refer to QP 8.4 as the guiding document for performing and documenting annual or other frequency inspections. Discuss and refer to field site closeout inspections in accordance with Standard Operating Procedure (SOP) 01-12, “Field Site Closeout Checklist.” Discuss any anticipated postdrilling impact on the NES such as drill location access roads and pads, etc. Indicate the need for any unscheduled surveillance inspection following completion of the drilling process such as a surface water run-off erosion controls inspection.

5.6.2 SMP 2–Integrated Work Management

Copy text from the TSR document, Section 5.6.2

Activities to Address SMP 2

List the IWD and integrated work management (IWM) processes and reference IMP 300.2, “Integrated Work Management for Work Activities.”

5.6.3 SMP 3–Unreviewed Safety Question Program

Copy text from the TSR document, Section 5.6.3

Activities to Address SMP 3

State that the USQ process will be handled in accordance with QP 9.1 and OST 300-00-06B, and the USQ process will be completed before the activity occurs to evaluate whether the activity is within the defined safety-basis envelop. State that the RDL will ensure that USQ documentation, as appropriate, is submitted to DOE annually.

5.6.4 SMP 4–Nuclear Criticality Program

Copy text from the TSR document, Section 5.6.4

Activities to Address SMP 4

State that the inventory at the NES was reviewed and the proposed activities have no potential for nuclear criticality. Discuss the diffuse nature of contamination at the proposed locations, the setback requirements from the waste disposal features, the inventory age, the fact that waste would not have been placed in a condition that could result in criticality and that drilling activities which might encounter a waste form would make the waste more diffuse. Also state that drilling will not add or redistribute water in quantities exceeding amounts already present at the site.

Note: Make sure the DF section supports any described requirements and assumptions and include a criticality assessment from HSR-6 as an appendix.

5.6.5 SMP 5–Radiation Protection Program

Copy text from the TSR document, Section 5.6.5

Activities to Address SMP 5

State that drilling activities will be conducted in accordance with LIR 402 700-01, the SSHASP, and the IWD. State that a Health Physics Operations (HSR-1) RCT will be on site during drilling and sampling activities, and all field personnel will have current LANL Radiation Worker II training and will be enrolled in LANL's personal dosimetry program. Refer to posting and site control requirements; radiation monitoring instruments type, calibration, action levels, and controls including personal protective equipment (PPE); the disposition of drill cuttings, waste characterization strategy form (WCSF); and additional waste management information discussed elsewhere in the drilling plan.

5.6.6 SMP 6–Quality Assurance Program

Copy text from the TSR document, Section 5.6.6

Activities to Address SMP 6

Refer to the LANL QMP IP-300-SD, ENV-ECR QMP, 10 CFR 830 Subpart A, DOE Order 414.1, and any other LANL institutional quality management requirements. State that the QMP(s) is implemented through written procedures (QPs and SOPs) for all activities including record keeping, and quality surveillance. Discuss the pedigree of procedures with respect to organizational changes and mention the availability on the ENV-ECR website.

5.6.7 SMP 7–Abnormal Event Reporting Program

Copy text from the TSR document, Section 5.6.7

Activities to Address SMP 7

Refer to LIR 402-130-01 and provide a definition with examples. State that if an abnormal event occurs during field activities the reporting process outlined in the SSHASP, LIR 402-130-01, and Notice 0139 will be followed.

5.6.8 SMP 8–Qualification and Training Program

Copy text from the TSR document, Section 5.6.8

Activities to Address SMP 8

The project SSHASP and IWD provide the task-specific training requirements. Classroom training on the TSR implementation plan requirements and other site-specific activities will be required for all workers performing tasks within or in support of the work. Discuss ENV-ECR training requirements and conformance with DOE Order 5480.20A, ENV-ECR QPs 2.1, 2.2, and 2.3.

5.6.9 SMP 9–Record Keeping Program

Copy text from the TSR document, Section 5.6.9

Activities to Address SMP 9

The SSHASP provides all applicable record-keeping requirements as directed by the Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard 29 CFR 1910.120. Include a discussion of field notebook requirements following QP 5.7. Also, discuss other records such as sampling paperwork including the location and chain-of-custody among the ENV-ECR teams. All records generated during field activities are submitted to the ENV-ECR RPF in accordance with QP 4.4.

5.6.10 SMP 10–Configuration Management

Copy text from the TSR document, Section 5.6.10

Activities to Address SMP 10

Reference management activities comply with the QMP and include baseline project controls for scheduling, implementing and documenting project scope and performance (LIR 400-01-01). Discuss the line management organization for control of the work. Present the grade assigned to work activities, facilities, etc. and discuss the installation of any capitol improvements such as monitoring wells, etc that will permanently change the configuration of the NES. Reference the control of project records. Address change control (LIR 240-01-01) and the relationship to the SSHASP, the Consent Order, the IWM/IWD process, and the USQ process required at the NES. Reference management assessment and discuss quality assessments; referencing QP 10.5.

5.6.11 SMP 11–Vehicle and Equipment Maintenance

Copy text from the TSR document, Section 5.6.11

Activities to Address SMP 11

Discuss inspections and maintenance of all equipment used during

field activities, including emergency response equipment.

5.6.12 SMP 12–Emergency Preparedness

Copy text from the TSR document, Section 5.6.12

Activities to Address SMP 12

Discuss emergency action/response plan contained in the SSHASP. Mention that the potential for releases to the environment is minimized in accordance with the SSHASP's spill-control plan and the predrilling borehole location evaluation.

5.6.13 SMP 13–Fire Protection

Copy text from the TSR document, Section 5.6.13

Activities to Address SMP 13

Refer to LIR 402-910-01, mention the fire matrix and resulting requirements, and describe the requirement and process of checking the fire-danger rating. Refer to the IWD for specific activity-based fire requirements.

5.6.14 SMP 14–Calibration Program

Copy text from the TSR document, Section 5.6.14

Activities to Address SMP 14

Discuss any calibration requirements for monitoring equipment, generally referencing HSR-1 instrument-specific procedures, and calibration frequency. Mention the documentation requirements for all calibrations.

5.6.15 SMP 15–Hazardous Materials Protection Program

Copy text from the TSR document, Section 5.6.15

Activities to Address SMP 15

Refer to SSHASP and IWD for hazardous materials protection requirements. Also, refer to the monitoring and measurement discussed in Section 6 of the TSR implementation plan. Mention that all field personnel will have proper and current training (OSHA HAZWOPER).

5.6.16 SMP 16–Radioactive and Hazardous Waste Management Program

Copy text from the TSR document, Section 5.6.16

Activities to Address SMP 16

Refer to WCSF and SOP 01.06 as well as all applicable federal,

state, and Laboratory requirements. Mention that all wastes have an identified disposal path and describe the management and disposition of drill cuttings.

6.0 DESIGN FEATURES

This section describes site-specific NES DFs and drilling and sampling activity controls related to drilling and sampling in and near the NES needed to maintain the performance requirements of the NES as described in the TSR document and SER. The DFs provide the documentation and technical justification for any site-specific limits and criteria derived for the SMPs described in Section 5.

6.1 Inventory Isolation System

Indicate the Inventory Isolation System is a composite system that uses various combinations of primary containers/vessels, configuration of burial (e.g. tunnel/shaft, pit/trench), burial depth, inventory distribution, and thickness and characterization of cover materials and caps to provide buried wastes with passive protection against the effects of external forces, including those associated with the activities planned for the NES.

6.1.1 Primary Containment Vessels

Discuss DFs of the primary containment vessels at the specific NES including pits, trenches, disposal shafts, and evaporation ponds. Indicate the methods used to determine pit boundaries and shaft locations.

6.1.2 Configuration of Burial

Indicate the configuration of the buried waste, if known. Site documents that include inventory and location details.

6.1.3 Burial Depth

Provide DFs pertaining to the burial depth of waste at the specific NES.

6.1.4 Inventory Distribution

Provide DFs pertaining to the inventory distribution at the specific NES.

6.1.5 Thickness and Characteristics of Cover Material and Caps

Provide DFs pertaining to the thickness and characteristics of the cover material and caps at the specific NES.

6.2 Performance Criterion

Provide specific performance criteria to be followed during drilling and sampling activities. Include requirements for excavation, adding clean fill

materials to the site, locating support facilities, and minimum drilling distance constraints.

7.0 CONDUCT OF OPERATIONS

Provide a general discussion of how ENV-ECR meets conduct of operations requirements. Refer to the ENV-ECR conduct of operations policy manual.

8.0 OTHER REQUIREMENTS

State that the purpose of this section is to identify other requirements not specifically addressed previously by the drilling plan but considered necessary so drilling does not adversely impact NES performance.

8.1 Miscellaneous NES S&M Requirements

List any additional requirements, the applicability to the NES and any actions required to address the requirements. Include a statement If there are no other requirements.

8.2 Suspend or Stop Work Conditions

Provide a reference to a table of suspend or stop work conditions identified throughout the implementation plan. Include the requirement that the person-in-charge (PIC) and University technical representative (UTR) must be contacted immediately if a suspend- or stop-work condition occurs.

9.0 REFERENCES

Include a list of references used to prepare the TSR implementation plan.

The outline and content of the TSR implementation plan may vary depending on site-specific and programmatic conditions. This outline is provided solely as an aid to the project leader in preparing a site-specific TSR implementation plan for an NES.